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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,374	04/02/2001	Yuji Yamamoto	Q63838	7619

7590 05/06/2005
SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

DO, CHAT C

ART UNIT PAPER NUMBER

2193

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,374

Applicant(s)

YAMAMOTO, YUJI

Examiner

Chat C. Do

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03/03/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment filed 03/03/2005.
2. Claims 1 and 3-5 are pending in this application. Claims 1 and 4-5 are independent claims. In Amendment, claims 1 and 3-5 are amended and claim 2 is cancelled. This Office action is made final.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: setting the sampling frequency and coefficients. In the claims, they fails to show the relationship or the need to have the sampling frequency six times as large as the central frequency to the IIR filter. In addition, they also fails to show the relationship of these coefficients (b1, b2, a0, and a2) in the IIR filter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being obvious over Richard G. Lyons ("Understanding digital signal processing") in view of Michael ("Design of high-speed digital band-pass filters without multipliers").

Re claim 1, Richard discloses a second-order band-pass Infinite Impulse Response (IIR) type digital filter (e.g. Figure 6-19 as an example), comprising: a first-order input feedback coefficient b_1 set at $-1 + 2^{-n}$; and a second-input feedback coefficient b_2 set at $1 - 2^{-n}$ where n is an odd number of 3 or larger, wherein a zero-order output coefficient a_0 is set at 2^{-n} and a coefficient a_2 of a second-order output is set at -2^{-n} (e.g. a general coefficients of IIR filter is in equation 6-22 wherein the coefficients are chosen depending conditions to optimize circuits and page 245. Thus, coefficients a_k and b_k corresponding to a_n and b_n above would be set to any number). Richard fails to disclose a sampling frequency is-set to six times as large as a central frequency of a passing frequency band. However, Michael discloses in the abstract section in page 553 that the sampling frequency is-set to six times as large as a central frequency of a passing frequency band. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add the sampling frequency set to six times as large as a central frequency of a passing frequency band as seen in Michael's invention into Richard's invention because it would enable to increase the efficiency of band-pass filter in realizing high sampling rate.

Re claim 3, the second-order output is subtracted from the zero-order output and the subtraction result is multiplied by 2^{-n} (e.g. Figure 6-21).

Re claim 4, it is a reference signal with limitations cited in claim 3. Thus, claim 4 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Re claim 5, it is a reference signal with limitations cited in claim 3. Thus, claim 5 is also rejected under the same rationale as cited in the rejection of rejected claim 3.

Response to Arguments

7. Applicant's arguments with respect to claims 1 and 3-5 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

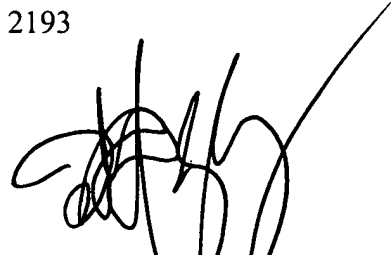
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on 7:00AM to 5:00PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C Do
Examiner
Art Unit 2193

April 20, 2005



TODD HIGBERG
PRIMARY EXAMINER